UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,427	09/28/2001	Harini V. Sundaresan	TI-31767	6354

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EXAMINER
TORRES, JUAN A

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

	Application No.	**Applicant(s)**
Office Action Summary	09/966,427	SUNDARESAN, HARINI V.
	Examiner	**Art Unit**	
	Juan A. Torres	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _13 June 2005_.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-10_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-10_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _13 June 2005_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to because

In FIG. 2A block 38 the recitation 1M/(RL + N) is improper. It is suggested to be changed to IM/(RL+N);

In FIG. 5 the recitation 1M/RL is improper. It is suggested to be changed to IM/RL; the recitation 1M/(RL + 2) is improper. It is suggested to be changed to IM/(RL+2).

In FIG. 6 the recitation 1M/RL is improper. It is suggested to be changed to IM/RL; the recitation 1M/(RL + 2) is improper. It is suggested to be changed to IM/(RL+2).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of

the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

In page 7 line 13 the recitation "1/RL" is improper; it is suggested to be changed to "RL".

In page 7 line 14 the recitation "1/(RL + 2)" is improper; it is suggested to be changed to "(RL + 2)".

Appropriate correction is required.

Claim Objections

Claims 1-7 are objected to because of the following informalities:

It is not clear what is claimed. The recitation in line 1 of claim 1 "In computational circuitry for determining", is suggested to be changed to "A method for determining in a computational circuit" (See line 8 of claim 1, "the method").

In line 11 of claim 1 the recitation "1/(RL_N)" is improper; it is suggested to be changed to "1/(RL+N)".

In line 10 of claim 1 the recitation "1/(cosine(θ+N))" is improper; it is suggested to be changed to "1/(cosine(θ)+N)".

Claim 5 is objected to because of the following informalities:

In line 7 of claim 5 the recitation "DFT (differential fourier transform)" is improper; It is suggested to be changed to "DFT (Discrete Fourier Transform)".

Claim 7 is objected to because of the following informalities: the recitation

"arctan (IM/RI + N)" is improper. It is suggested to be changed to "arctan (IM/(RL + N)).

Claims 8-10 are objected to because of the following informalities:

In line 14 of claim 8 the recitation "1/RL+2" is improper; It is suggested to be

changed to "1/(RL+2)".

Appropriate correction is required.

Response to Arguments

Applicant's arguments filed on 03/14/2005 have been fully considered but they

are not persuasive.

The Applicant contends, "This corresponds substantially to the graphs of Figures

5 and 6 of this application. Note further that the claims do not recite that the factor K is

7. Instead this application teaches how to determine the factor K at page 13, lines 3 to

8. The above example is plotted with a factor K of -3.2.".

The Examiner disagrees and asserts, that, as indicated in the previous Office the

specification clearly states (page 13 lines 3-8) that:" Further, referring to Figures 5 and

6, assuming the value of N is chosen to be 2, there is an overall reduction of amplitude

of the demodulated signal by a factor K that is substantially uniform. In the example

illustrated in Figures 5 and 6, the factor K was simply determined by taking the ration of

the amplitude of curve 50 and curve 52 at peak 53. That is, K

=max((idealBBMUX)/max(scaledBBMUX)) . This ratio was calculated to be

approximately 7.

Also if the value of k is chose equal to –3.2 the comparison still is not persuasive,

because the results are even worse:

K=	-3.2														
N=	2														
TETHA	degrees	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280
PI/180	0.017452867	0	0.349057	0.698115	1.047172	1.396229	1.745287	2.094344	2.443401	2.792459	3.141516	3.490573	3.839631	4.188688	4.537745	4.886803
REAL	RL=cos (TETHA)	1	0.939696	0.766055	0.500022	0.173682	-0.17361	-0.49996	-0.76601	-0.93967	-1	-0.93972	-0.7661	-0.50009	-0.17376	0.173531
IM	IM=sin(TETHA)	0	0.342012	0.642775	0.866013	0.984802	0.984815	0.866051	0.642833	0.342084	7.67E-05	-0.34194	-0.64272	-0.86597	-0.98479	-0.98483
		0	20	40	60	80	100	120	140	160	180	200	220	240	260	280
	atan (IM/RL)	0	0.349057	0.698115	1.047172	1.396229	-1.39831	-1.04725	-0.69819	-0.34913	-7.7E-05	0.348981	0.698038	1.047095	1.396153	-1.39638
	atan (IM/RL+2)	0	0.115822	0.228327	0.333466	0.425393	0.494524	0.523599	0.480257	0.312078	7.67E-05	-0.31197	-0.48021	-0.5236	-0.49455	-0.42543
	k*atan (IM/RL+2)	0	-0.37063	-0.73065	-1.06709	-1.36126	-1.58248	-1.67552	-1.53682	-0.99865	-0.00025	0.998302	1.536687	1.675516	1.58255	1.361375
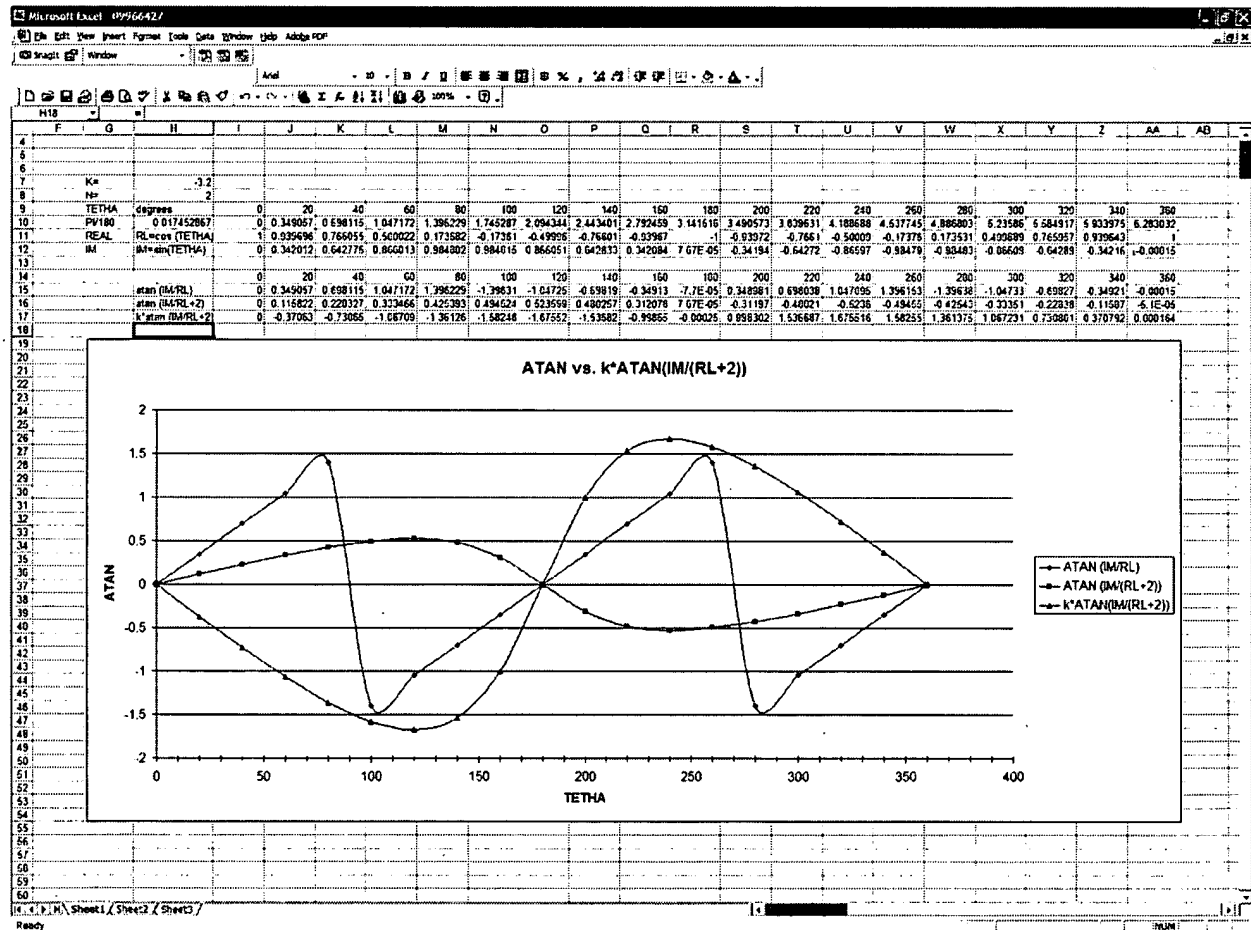
For these reasons and the reason stated en the previous Office Action, the

rejection of claims 1-10 is maintained.
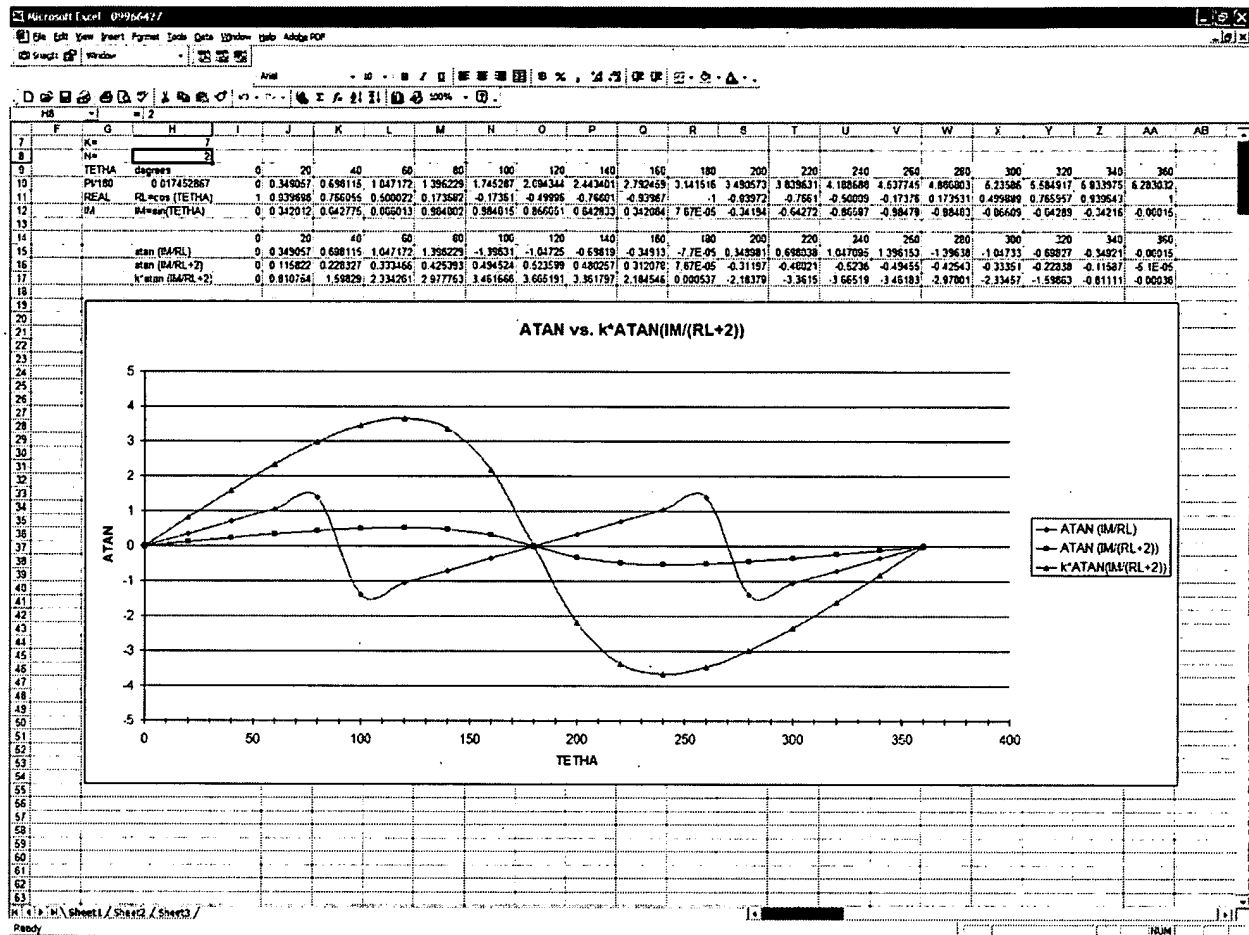
Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-10 rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility. The disclosure present a method for computing the value of arctangent (IM/RL) using the alternative formula 7*arctangent (IM/(RL+2)) (see original specification page 13 lines 3-8) in all the values of the imaginary part (IM=sin (θ)), and the real part (RL=cos (θ)). The following graphic is a representation of the two values of arctangent (IM/RL) and 7*arctangent (IM/(RL+2)) (in the OY axes) for θ= 0 to θ=360 is steps of 20 degrees:

K= 7
N= 2

TETHA	degrees	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280
PI/180	0.017452867	0	0.349057	0.698115	1.047172	1.396229	1.745287	2.094344	2.443401	2.792459	3.141516	3.490573	3.839631	4.188688	4.537745	4.886803
REAL	RL=cos (TETHA)	1	0.939696	0.766055	0.500022	0.173682	-0.17361	-0.49996	-0.76601	-0.93967	-1	-0.93972	-0.7661	-0.50009	-0.17376	0.173531
IM	IM=sin(TETHA)	0	0.342012	0.642775	0.866013	0.984802	0.984815	0.866051	0.642833	0.342084	7.67E-05	-0.34194	-0.64272	-0.86597	-0.98479	-0.98483

		0	20	40	60	80	100	120	140	160	180	200	220	240	260	280
	atan (IM/RL)	0	0.349057	0.698115	1.047172	1.396229	-1.39631	-1.04725	-0.69819	-0.34913	-7.7E-05	0.348981	0.698038	1.047095	1.396153	-1.39638
	atan (IM/RL+2)	0	0.115822	0.228327	0.333466	0.425393	0.494524	0.523599	0.480257	0.312078	7.67E-05	-0.31197	-0.48021	-0.5236	-0.49455	-0.42543
	k*atan (IM/RL+2)	0	0.810754	1.59829	2.334261	2.977753	3.461666	3.665191	3.361797	2.184546	0.000537	-2.18379	-3.3815	-3.66519	-3.46183	-2.97801

Microsoft Excel 09966427

File Edit View Insert Format Tools Data Window Help Adobe PDF

	TETHA	degrees	0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360
	PV180	0.017452867	0	0.349057	0.698115	1.047172	1.396229	1.745287	2.094344	2.443401	2.792459	3.141516	3.490573	3.839631	4.188688	4.637745	4.886803	5.23586	5.584917	5.933975	6.283032
	REAL	RL=cos (TETHA)	1	0.939698	0.766055	0.500022	0.173592	-0.17351	-0.49995	-0.76601	-0.93967	-1	-0.93972	-0.7561	-0.50009	-0.17376	0.173531	0.499889	0.765957	0.939543	1
	IM	IM=sin(TETHA)	0	0.342012	0.642775	0.866013	0.984002	0.984015	0.866051	0.642823	0.342084	7.67E-05	-0.34194	-0.64272	-0.86597	-0.98479	-0.98483	-0.86609	-0.64289	-0.34216	-0.00015

			0	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360
	atan (IM/RL)		0	0.349057	0.698115	1.047172	1.396229	-1.39631	-1.04725	-0.69819	-0.34913	-7.7E-05	0.349981	0.698038	1.047095	1.396153	-1.39638	-1.04733	-0.69877	-0.34921	-0.00015
	atan (IM/RL+2)		0	0.115822	0.228327	0.333466	0.425393	0.494524	0.523599	0.480257	0.312078	7.67E-05	-0.31197	-0.48021	-0.5236	-0.49455	-0.42543	-0.33351	-0.22838	-0.11587	-5.1E-05
	k*atan (IM/RL+2)		0	0.810764	1.59829	2.334261	2.977763	3.461666	3.665191	3.361797	2.184546	0.000537	-2.18379	-3.3615	-3.66519	-3.46183	-2.97801	-2.33457	-1.59863	-0.81111	-0.00036

ATAN vs. k*ATAN(IM/(RL+2))

Legend:
- ATAN (IM/RL)
- ATAN (IM/(RL+2))
- k*ATAN(IM/(RL+2))

X axis: TETHA   Y axis: ATAN

It is evident that the approach is not good at all. The proposed claims lack of utility in the full range of the disclosure.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is (571) 272-3119. The examiner can normally be reached on Monday-Friday 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Juan Alberto Torres, Ph. D.
06-27-2005

KEVIN BURD
PRIMARY EXAMINER